

REMARKS/ARGUMENTS

Claims 2-6 and 21-23 are pending herein. Claim 21 has been amended as supported by Figs. 5(c) and 5(d) of the present application, for example. Claims 2-6, 22 and 23 have been amended in light of the amendments made to claim 21. Applicants respectfully submit that no new matter has been added.

Examiner Chevalier is thanked for courtesies extended to Applicants' undersigned representative during telephonic interviews on October 18, 2007 and October 22, 2007. The content of those interviews has been incorporated into the following remarks.

As a result of the first telephonic interview on October 18, 2007, Applicants submitted a proposed amended claim 21 to Examiner Chevalier for her review. During the telephonic interview on October 22, 2007, Examiner Chevalier agreed that the amendment, which positively recites that a direction of the polarized wave of each of a plurality of polarization-maintaining (P/M) optical fibers is rotated so as to be parallel to a predetermined plane of polarization, overcomes the prior art of record. Examiner Chevalier indicated that the prior art fails to disclose or suggest a process or structure where individual optical fibers can or should be rotated such that the polarized wave in each of a plurality of optical fibers is parallel to a predetermined plane of polarization before the ribbon portion is cured. Lastly, Examiner Chevalier indicated that she would require an RCE for entry and consideration of the amended claims submitted above.

1. Claims 2-6 and 20-23 were rejected under §103(a) over Mills in view of Pleibel, Logan and Cooke. To the extent that this rejection may be applied against the amended claims, it is respectfully traversed.

Amended claim 1 recites, in relevant part, a ribboned array of P/M fibers comprising a plurality of P/M optical fibers and a cured ribbon portion. A direction of the polarized wave of each of the plurality of P/M optical fibers is rotated so as to be parallel to a predetermined plane of polarization. The cured ribbon portion has first

and second lateral ends and has a length of 2 to 300 mm. Each of the P/M optical fibers are rotated such that the polarized wave is parallel to the predetermined plane of polarization before the ribboned portion is cured. At least an exposed surface of the ribboned portion comprises material that can be stripped to expose the P/M optical fibers without damaging the P/M optical fibers.

Examiner Chevalier is respectfully requested to note that the length of the cured ribbon portion is critical due to the fact that each of the P/M optical fibers is rotated such that the polarized wave is parallel to the predetermined plane of polarization before the ribbon portion is cured. Because each P/M optical fiber needs to be rotated to the predetermined plane of polarization, the friction created between the fibers becomes a limiting factor. Because the friction force increases per unit length and because the each P/M optical fibers can only sustain a limited amount of torsional stress without damage, the inventors have determined, as disclosed in the first paragraph on page 25 of the specification, that the maximum length in which the direction of the polarized wave can be adjusted in relation to the other P/M optical fibers is about 300 mm. As disclosed in the last two paragraphs on page 24 of the specification, the length of the ribboned portion must be at least 2 mm to provide the necessary strength required to prevent the individual P/M optical fibers from rotating with respect to one another after the ribboned portion is cured. Accordingly, it should be clear to Examiner Chevalier that the upper and lower length limitations of the cured ribbon is a critical function of (1) the ability to rotate the individual optical fibers in relation to one another before the ribbon is cured, and (2) the ability of the cured ribbon to securely maintain the rotational relationship of the individual optical fibers with respect to one another. These critical functions would not be attained by providing a ribbon over an entire length of P/M optical fibers (i.e., a full length ribbon).

Mills discloses a typical optical fiber array of non-P/M optical fibers where the fibers are fixed into a full length ribbon at a point of manufacture. Mills discloses, in column 4, lines 28-29, that the ribbon coating is commonly applied to all of the optical

fibers in an extrusion process along the length of the optical fibers. Because the fibers of Mills do not have or need any form of rotational alignment, it is clear that the individual optical fibers of Mills have not been rotationally aligned prior to the extrusion of the ribbon material. Therefore, Mills fails to disclose or suggest most of the important features recited in claim 21.

Pleibel fails to overcome the deficiencies of Mills. Pleibel merely discloses, in the Abstract, a method of making a P/M optical fiber. Applicants respectfully submit that merely inserting the P/M optical fiber into the full length ribbon of Mills will certainly not result in the present invention. As disclosed in column 4, lines 28-29 of Mills, the common outer coating layer (i.e. the full length ribbon) of Mills is commonly applied to all of the optical fibers in an extrusion process along the entire length of the optical fibers. This point is very important, because, as disclosed in the present specification, each of the individual P/M optical fibers must be rotationally aligned at its terminal end in the field by sophisticated instruments, because there is absolutely no known way to preemptively rotate such fibers at the time of manufacture so that the fibers will remain at a predetermined rotation at all points along the length of the full length ribbon. There is clearly no disclosure or suggestion in Pleibel that such a field alignment could be eliminated by selectively rotating the fibers before passing them through the extrusion coating process of Mills. Further, there is clearly no disclosure or suggestion in Pleibel that the multiple P/M optical fibers can or should be rotated in relation to one another before passing them through an extrusion process joining all of the fibers together over their entire length. Therefore, Pleibel fails to overcome the deficiencies of Mills, at least with respect to (1) rotationally aligning a plurality of optical fibers to a predetermined plane and (2) a cured ribbon portion having a length of 2 to 300 mm.

The PTO's use of Logan and Cooke for their alleged disclosure of varying lengths of ribbons is technically without merit and fails to overcome the deficiencies of Mills and Pleibel. As explained more fully in the Amendment filed July 23, 2007, **Logan's alleged recited range of 200 mm to 500 mm in column 5, lines 9-11 does**

not relate to a cured ribbon portion. This length relates specifically to a lay length as a unit of measure for a helical twist of one ribbon group about another ribbon group. **Please note that the ribbons of Logan are full length ribbons similar to Mills.** Similarly, it is clear from Figs. 1 and 2 of Cooke that a common coating 11 is formed along the full length of the optical fibers 50 such that **Cooke discloses a full length ribbon similar to Mills. The flexible casing 14 of Cooke is not any form of cured ribbon portion that can be considered analogous to the ribbon of Mills,** especially in light of the fact that the fibers of Cooke are already maintained in a full length ribbon similar to Mills. Therefore, Logan and Cooke fail to overcome the deficiencies of Mills and Pleibel.

In light of the foregoing, a ribboned array of P/M fibers as recited in claim 21 would not have been obvious to one skilled in the art provided with the disclosures of Mills, Pleibel, Logan and Cooke. Specifically, Mills, Pleibel, Logan and Cooke all fail to disclose or suggest that each of a plurality of P/M optical fibers is rotated such that the polarized wave is parallel to a predetermined plane of polarization before the ribbon portion is cured, as recited in claim 21. Further, it should be clear that Mills, Pleibel, Logan, and Cooke (all disclosing full length ribbons) fail to disclose that the length of a ribbon is a result effective variable that can or should be modified to be short enough to allow for the rotation of individual optical fibers before the ribbon is cured and to be long enough to securely maintain rotational relationships between the optical fibers after the ribbon is cured. Since claims 2-6, 22 and 23 depend either directly or indirectly from claim 21, those claims are also believed to be allowable over the applied prior art. Accordingly, reconsideration and withdrawal of the present rejection are respectfully requested.

For at least the foregoing reasons, Applicants respectfully submit that all pending claims herein define patentable subject matter over the art of record. Accordingly, the PTO is requested to issue a Notice of Allowance for this application in due course.

If Examiner Chevalier believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

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